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INTERNATIONAL JOINT COMMISSION

CANADA - UNITED STATES

ANNUAL REPORT 1975
INTERNATIONAL JOINT COMMISSION

The noblest of the elements is water.
— Pindar, Olympian Odes

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Preface

The Second Annual Report of the International Joint Commission for the calendar year 1975, reviews twelve months of the Commission's activities and many of the internal operations of the Commission that bear on these functions. Additionally, this Report describes the day-to-day work of the Boards of Control monitoring the regulation of levels and flows; investigative, monitoring and surveillance Boards; and the status of other matters of concern to the Commission under its various mandates.

What distinguishes the second Report from the first is that the narrative of the year's work, while dominant, is now supplemented by an analysis and appraisal of the Commission's activities.

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Chairman, United States Section

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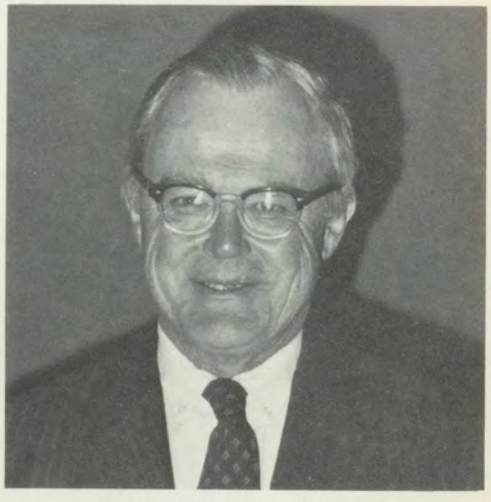
Public Health Engineer, Richelieu, P.Q.



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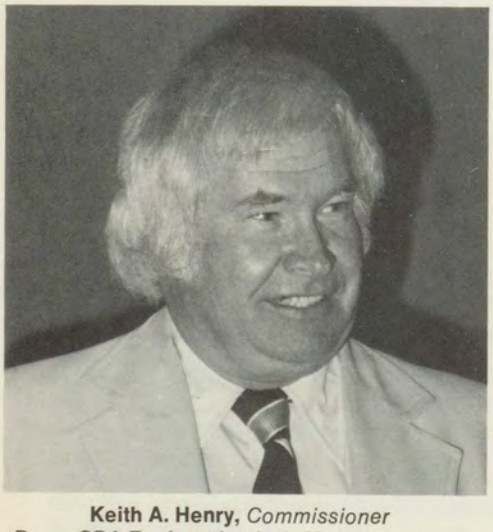

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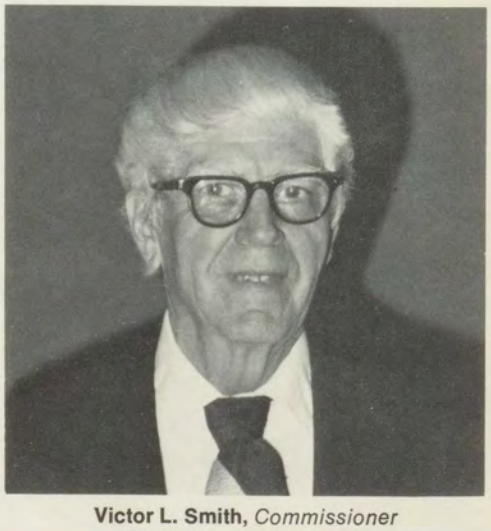

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Publisher, Robinson, Ill.

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The International Joint Commission

"The pattern of co-operation that has been developed over the years under the treaty creating the International Joint Commission exemplifies the best in international relations". — United States President John F. Kennedy, 1961.

The International Joint Commission is a permanent, unitary body set up pursuant to the Boundary Waters Treaty of 1909. It consists of six Commissioners, three of them American and three Canadian. There is a Canadian co-chairman and an American co-chairman.

The Commissioners act, not as separate national delegations under instruction from their respective Governments, but as a single body seeking common solutions in the joint interest and, most important, in accordance with the agreed rules or principles set out in the Treaty. Significantly, all Commissioners make a solemn declaration in writing that they will faithfully and impartially perform the duties imposed under the Treaty. The effect of this declaration is to give the Commissioners a sense of the primary loyalty they have to the treaty system while they are serving.

The Boundary Waters Treaty is unique in the history of the United States and Canada and in the relations between any two independent states. Long before consideration for the environment became a "popular" concern, this Treaty provided for safeguards, among its other functions, for waters on and flowing across the border between the United States and Canada. The IJC is concerned primarily, although not exclusively, with water problems along the boundary which, including Alaska, is about 5,000 miles long. The development and exploitation of these waters give rise to many problems which find their way to the International Joint Commission.

The IJC was an unusual international body when it was established and it still is; not only in its composition but, in the way in which it operates. The operating concept assumes that solutions to problems in which the two countries have different — even opposing — interests should be sought, not by the usual bilateral adversary negotiations, but in the joint deliberations of a permanent tribunal composed equally of Canadians and Americans. In almost every case which has come before them, the Commissioners have reached unanimous agreement. On only three occasions has the Commission divided on national lines in the more than 100 matters submitted or referred to it. Thus, the faith of the two governments in the principles and procedures of the treaty and its traditions has been amply justified.

The IJC has headquarters offices in Washington, D.C. and Ottawa, Ontario, each staffed with a small group of advisers and a Secretary for each section as provided in the treaty. A permanent regional office was established in Windsor, Ontario in 1973 specifically to assist the Commission in its responsibilities under the terms of the 1972 Great Lakes Water Quality Agreement. It is staffed jointly by Canadians and Americans and its operational costs are shared equally by the two governments.

The Commission does not have to maintain a large technical staff at headquarters to carry out its work — although its present small establishment necessarily will increase slowly to

meet the IJC's growing needs. A unique and valuable feature of its procedure derives from its power to select and use the most experienced and competent people in both countries and combine them in joint undertakings. When a matter is referred to the IJC by the Governments, the letter of reference almost invariably states that the Governments will assist the Commission by making available the services of engineers and other specially qualified personnel of government agencies. The Commission establishes international boards of advisers to organize and carry out the required technical studies and field work.

Similarly, when the Commission approves an application for the uses of waters involving the building of a structure, it does so subject to certain conditions and usually appoints an international board of control to ensure that the applicant complies with the terms of the Order of Approval.

The Commission's responsibilities under the 1909 Treaty fall into three general categories:

The first involves the exercise of quasi-judicial powers in approving or withholding approval of applications for the use, obstruction or diversion of boundary waters on either side of the line that would affect the natural level or flow on the other side. This responsibility extends also to the approval of works in water flowing from boundary waters and in waters that have crossed the boundary, when such works would affect the natural water level on the other side of the boundary. In granting such approval, the Commission imposes conditions to ensure that suitable and adequate provision is made for the protection and indemnity of all interests on the other side of the line which may be injured by the approved use, obstruction or diversion. These approvals and their conditions are binding on both countries and the private parties, if any, involved in the application.

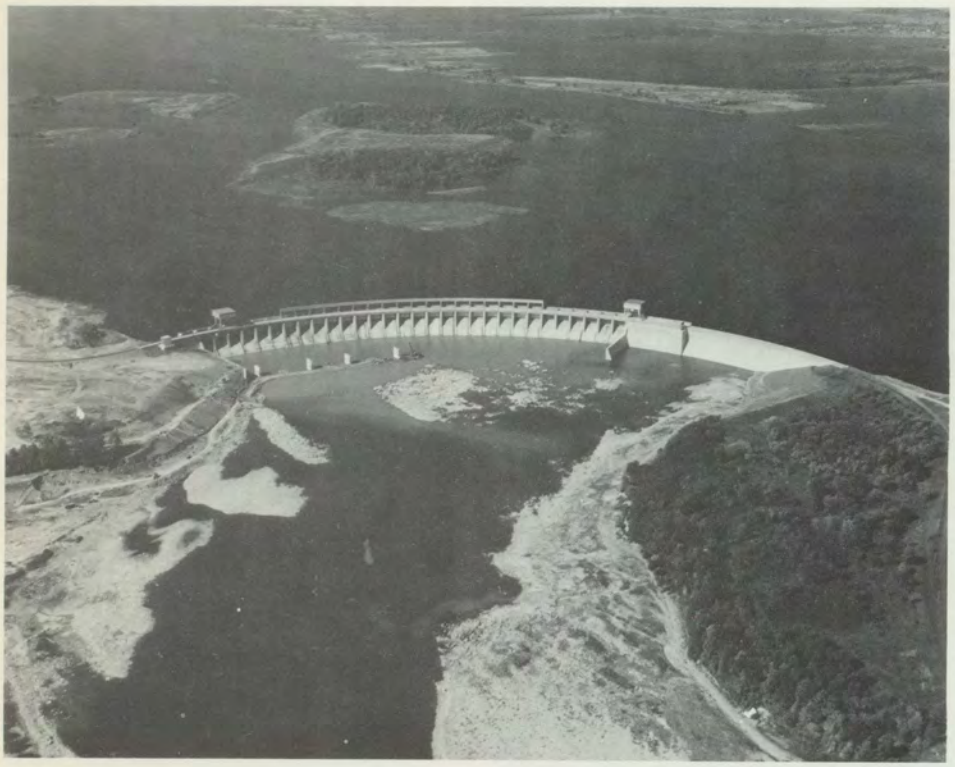
The second general category of IJC responsibilities under the Treaty is that of undertaking investigations and studies of specific problems, when requested by either or both Governments. This is known as a Reference. Under Article IX of the Treaty, either Government may refer to the Commission any question or matter of difference arising between them involving the rights, obligations or interests of either in relation to the other or to the inhabitants of the other, along the common frontier. In practice, the two Governments usually consult on the terms and then transmit a joint Reference to the Commission. The responsibility of the IJC in such cases is to investigate, to report the facts and circumstances to the two Governments and to make recommendations. Implementation of the recommendations in each case depends on the decisions of the two Governments, usually after consultation. References to the IJC have covered such diverse matters as utilization of the water resources of a river basin, design of remedial works to preserve the beauty of Niagara Falls, water and air pollution along the boundary, ecological and environmental effects of flooding the Skagit River valley, problems of residents of Point Roberts, Washington, resulting from its isolation from the rest of the

Governments assist the Commission by making available the services of qualified personnel of government agencies. The IJC is able to select and use the most experienced and competent people in both countries. Work in the field of water quality is a year-round activity.

United States, and the regulation of Great Lakes levels. In the great majority of references to the Commission, its recommendations have been accepted by the two governments.

In implementing these recommendations the two Governments often have given specific responsibilities and authority to the Commission in addition to investigative powers under the Boundary Waters Treaty. The Governments have accomplished this from time to time in various ways and with varying degrees of formality. The 1972 Great Lakes Water Quality Agreement is an example of the Governments formally conferring additional responsibilities on the Commission. Similarly, when requested by the two Governments, the IJC may monitor and coordinate actions or programs that result from governmental acceptance of recommendations made by the Commission in reports under Article IX of the Treaty.

There is a third category of responsibility of the IJC under the Treaty which might be considered as held in reserve, since the Governments have not seen fit to avail themselves of the facility it



Structures in boundary waters on either side of the line which affect the natural water level or flow on the other side, require IJC approval.

offers. Under Article X of the Treaty, the Governments may refer any questions or matters of difference to the Commission for decision rather than only for report and recommendations. These questions or matters need not be "along the common frontier" but may embrace the subject of any difference between Canada and the United States. Article X contains an additional requirement, however — such a reference requires the consent of both Governments, and this involves the prior advice and consent of the U.S. Senate and the consent in Canada of the Governor General in Council.

The nature of the continuing work of the International Joint Commission thus requires that it consider a broad range of United States-Canada problems of varying degrees of importance during the course of any one year.

With a few notable exceptions, the work of the International Joint Commission and its international boards has been unspectacular and little known, except to Canadians and Americans directly concerned with particular issues. However, year by year for more that 65 years, the IJC has gone about its business to prevent disputes along the celebrated boundary and to resolve differences between two countries which cherish their independence.

The International Joint Commission in 1975 - A Roundup

"The selfishness of vested interests, familiarity with evil conditions, which has begotten an indifference to both the doing and the suffering of wrong, an ill-directed spirit of economy averse to the assumption of financial burdens to remedy what was only regarded as an existing or potential evil to other communities, and the disinclination to change ingrained in humanity, have resulted in a situation along the frontier which is generally chaotic, everywhere perilous, and in some cases disgraceful." — Final IJC Report on the Pollution of Boundary Waters, Sept. 10, 1918.

The major preoccupations of the Commission during 1975 are dealt with in separate sections of this report. These items include the Garrison Diversion Reference, Great Lakes Water Quality, the Lake Champlain-Richelieu River Reference, Air Quality, Water Levels and Flows and the American Falls report. However, the "undefended border" also required the attentions of Commissioners, staff and numerous government agencies on a day-to-day basis.

Throughout the year the IJC met with and received reports from its various international boards. These boards

Water levels in the international section of the St. Lawrence River are an IJC concern.

"... 1974 has brought a heightened and highly accelerated bi-national effort to restore and enhance the water quality in the Great Lakes system ... there may be cause for concern that the momentum will not be maintained in the future because of the energy crisis, inflationary pressures and other factors ... Even after the international water quality objectives of the Great Lakes are achieved, it will take constant vigilance above and beyond ongoing surveillance and control programs to maintain the healthfulness and utility of the water." — Third Annual IJC Report on Great Lakes Water Quality, published 1975.

carry out important control, surveillance and investigative functions all along the international boundary.

Such matters as possible air pollution problems in the future on the Montana-Saskatchewan border, apportionment of Poplar River Waters and control of levels for Lake Ontario and the St. Lawrence River all were discussed.

The Commission met in Windsor, Ontario, especially to receive and discuss the annual reports of the Great Lakes Water Quality Agreement institutions.

During the year, the Commissioners conferred with the Rt. Hon. Pierre Elliott Trudeau, Prime Minister of Canada and with the Hon. Robert Bourassa, Premier of Quebec. An increasing workload now makes neces-

Ice booms such as this one in the St. Lawrence River can help to reduce flood damages to shore property.

sary IJC Executive meetings virtually on a monthly basis. In 1975 the Commissioners spent 64 days meeting in Executive session, with IJC Boards or the public.

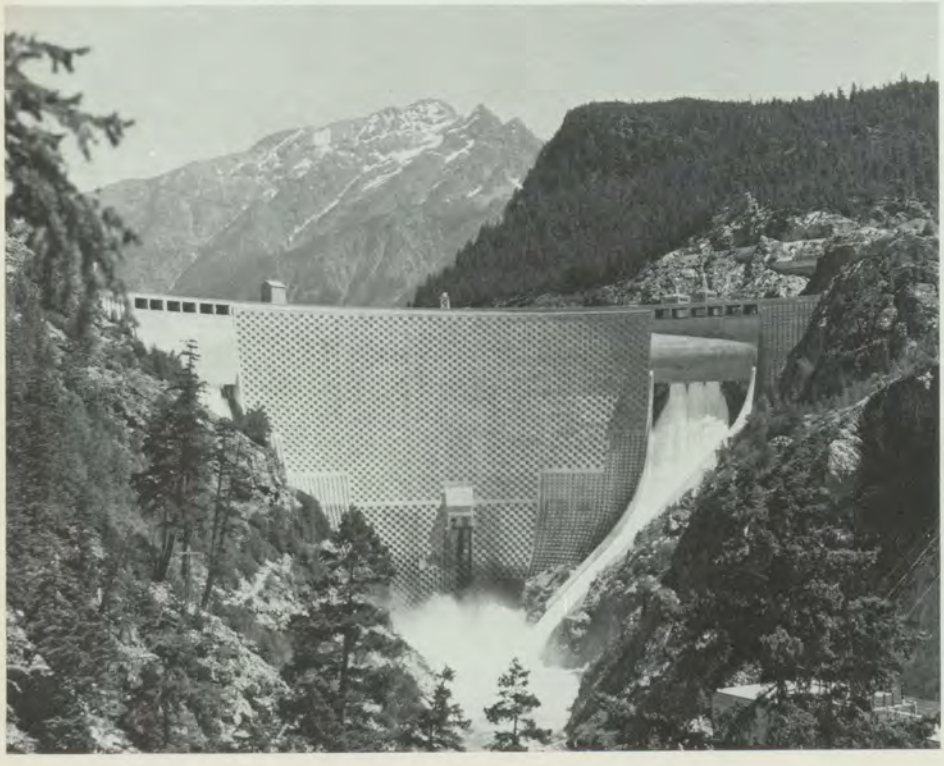
Hearings of a continuing nature occupied the Commission in March. The IJC hearing at Niagara Falls, New York was to consider the final report of the American Falls International Board while a hearing in Buffalo related to the Lake Erie Ice Boom.

Another ice boom was receiving the attention of Commissioners as the year ended. The United States announced plans to install a similar boom in American waters of the St. Marys River. It claimed there would be no material effect on water levels and flows, and therefore no application to the IJC was necessary. A majority of the Commissioners however believed that it was the IJC's responsibility to make such a decision.

The International Joint Commission dealt with water-air pollution incidents on the boundary ranging from a molasses spill in North Dakota which polluted waters flowing into Canada, to a fall-out of flyash in the Windsor area from a power plant in Detroit. In the latter case, individuals indicated that they would seek redress through the courts concerning the flyash incident.

At the year's end, drafting was underway on a final report on further regulation of water levels of the Great Lakes; the annual report about Water Quality of the Great Lakes had gone to press.

Some areas of interest on the boundary saw little action taken as the Commission must await action and decisions by various government bodies before proceeding. Two such matters involve British Columbia and the state of Washington. The Point Roberts reference awaits a response to the Commission's interim reports and discussions by the parties on such things as further negotiations about development of the area, supply of water, immigration and customs. Discussions are still underway concerning the conflicting claims of both Seattle and British Columbia about possibly raising the height of the Ross Dam on the Skagit River, thus flooding



Discussions are still underway concerning the possibility of raising the height of the Ross Dam on the Skagit River.

larger areas of the Skagit Valley in Canada to increase power production for Seattle.

The Great Lakes Water Quality Agreement of 1972 envisaged several "joint activities" by or on behalf of the Governments of Canada and the United States. The Commission's responsibilities include keeping informed about the reporting on these activities. However, the IJC has experienced difficulty in determining the status of these activities and the agencies or officers responsible for them. The Commission discussed throughout 1975 the best way of dealing with this problem.

The International Joint Commission and its Great Lakes Water Quality Board is considering the question of nuclear energy as it may affect water quality of the Great Lakes, although the primary forum for nuclear energy safeguards may not be the IJC. Contact has been established with nuclear officials in both countries in an effort to clarify the situation.

Viewing the year's work as a whole, the Commission recognized that the many problems it has faced with respect to water levels, water quality and air quality are likely to increase the responsibilities of the Commission in these areas in the years to come.

Water Levels and Flows

During 1975, 14 IJC Boards of Control concerned with water levels and flows were active at the United States-Canada border. The geographic scope of their activities ranged from the St. Croix River on the east coast to the Columbia River on the west. Responsibilities covered the relatively straightforward job of the International Columbia River Board of Control's monitoring the water levels of Lake Roosevelt, above Grand Coulee Dam, to the complex and demanding job of the International St. Lawrence River Board of Control of ensuring compliance with the Commission's Orders concerning regulation of Lake Ontario water levels.

Great Lakes Regulation

In the past year, water supply conditions have been such that most boards have not experienced special problems, except in the Great Lakes Basin. Rainfall amounts over the Lake Superior basin were normal last year, but on the lower lakes they were 11 to 15 per cent greater than normal. The high water supplies to the Great Lakes Basin required close and continuing surveillance by the International Lake Superior Board of Control, responsible for overseeing Lake Superior regulation.

High water levels on the Great Lakes below Lake Superior still existed in

The waters of the Great Lakes provide enjoyment for many citizens of both Canada and the United States but fluctuating water levels require close and continuing surveillance.

1975 so the Commission's 1973 directive to the Lake Superior Board remained in force. This directs the Board to regulate outflows through the St. Mary's River so as to provide maximum relief to downstream lakes without causing undue detriment to Lake Superior interests.

Water Levels Study

The Commission's Great Lakes water level study, begun in the mid-1960's, was nearing completion at year's end. Testimony was received from 397 persons at the 22 public hearings on lake levels. Some indication of the Commission's activities in assimilating the large volume of materials, including the Board's report and seven appendices as well as the public hearings mentioned above, may be appreciated from the fact that a drafting committee met on nine occasions for 22 days while the Commission as a whole discussed various aspects of its conclusions and its report raised at six executive sessions.

St. Lawrence River

Regulation of Lake Ontario outflows maintained the lake and the St. Lawrence River at close to average levels despite continuance of high inflows from the upper lakes. This good record was achieved by the St. Lawrence Board of Control's close attention to the details of regulation, usually on a day to day basis, coupled with judicious and timely flow changes when the situation warranted.

The International St. Lawrence River Board of Control reported to the

Control structures at the outlet of Lake Superior provide some regulation of water levels.

Water levels too high or too low have long been a problem throughout the Great Lakes Basin. The Commission's water levels study nearing completion at year's end will be of interest to many citizens of both countries.

Commission that unusally favourable weather and ice conditions had permitted the earliest opening date on record for the St. Lawrence Seaway. During April and May, the Board authorized reductions in flow to lessen the danger of serious flooding in the Lake St. Louis-Montreal area. By midsummer the level of Lake Ontario had declined below the long-term average level.

In November, the Commission received an application from the St. Lawrence Seaway Authority to partially

Regulation of Lake Ontario outflows maintained the lake and the St. Lawrence River at close to average levels.

Ice jams can affect water levels and block the water intakes of power stations.

Cross currents sometimes were a problem for vessels entering the Iroquois Locks. The IJC in 1975 received an application for permission to build a dyke which will reduce these cross currents.

close a section of the St. Lawrence River between the Island of Toussaint and Presqu'ile near Iroquois, Ontario by building a 760 foot long earth dyke. Purpose of the dyke would be to reduce cross currents upon vessels entering the Iroquois Locks. During the past five years, the Authority reported an increasing number of accidents in which vessels heavily struck the approach wall of the dock.

This partial closure could have a minor effect on the natural level or flow of boundary waters on the other side of the line (United States), so an application for approval of the IJC is necessary. Public hearings on the application were scheduled by the Commission for early January, 1976 in Watertown, New York and Cornwall, Ontario.

Lake Erie-Niagara Ice Boom

The Commission held a public hearing in early March on the Lake Erie ice boom, constructed in 1964 with IJC approval to lessen the possibilities of ice blocking the water intakes of the U.S. and Canadian hydropower plants downstream on the Niagara River. The boom can also reduce flood damages to shore property. It is installed at the beginning of winter and removed in the spring, following a public hearing. The March hearing dealt not only with a report on the season's operation and consideration of the spring removal for the ice boom, but also considered an extension of the termination date for the Commission's Order.

Opinions given at the public hearing favoured re-issuing the Orders of Approval for the ice boom. Subsequently, the Commission granted a five-year extension through May 15, 1980.

Poplar River

Proposed development in Canada involves extensive consumption of water from the Poplar River Basin and the Commission asked its International Souris-Red Rivers Engineering Board to advise the Commission concerning an equitable apportionment at the international boundary of flows of the Poplar River Basin. On receipt of this Board's report and following public hearings, the Commission will make recommendations to the Governments about the apportionment of Poplar River Basin flows.

The Red River was not always a tranquil, peaceful stream in 1975. Heavy damage through extensive flooding was experienced in North Dakota and Minnesota, and the Red River approached flood stage at Winnipeg.

Souris-Red Rivers

The International Souris-Red Rivers Engineering Board reported to the Commission that for the second consecutive year damaging floods were experienced on the Saskatchewan and North Dakota reaches of the Souris River. Heavy spring rains coinciding with the final stages of snowmelt runoff were the cause. The governments of Canada, Manitoba and Saskatchewan are studying the water and related resources of the Souris Basin in Canada. The results of these studies will be of interest to the Commission in its future work.

In late June the upper Red River Basin experienced extremely heavy rains with up to 12 inches of rainfall recorded. Heavy damage to crops and urban centres through extensive flooding was experienced in North Dakota and Minnesota and the Red River approached flood stage at Winnipeg.

Roseau River

A final Report (Joint Studies for Coordinated Water Use and Control in the Roseau River Basin) from the Commission's International Roseau River Engineering Board assesses existing and possible future projects to control or use the water of the Roseau River Basin. The proposed water control plan in the Report outlined the nature and magnitude of possible future Basin water resource development in each nation and the anticipated effects.

The report was widely distributed and the numerous appendices were placed in several localities in Minnesota and Manitoba where they could be studied by any interested member of the public. The Commission arranged a briefing on the subject by the Board, to be held in the area early in 1976. Public hearings on the Board's report were also planned for the same period.

Water Quality

Great Lakes

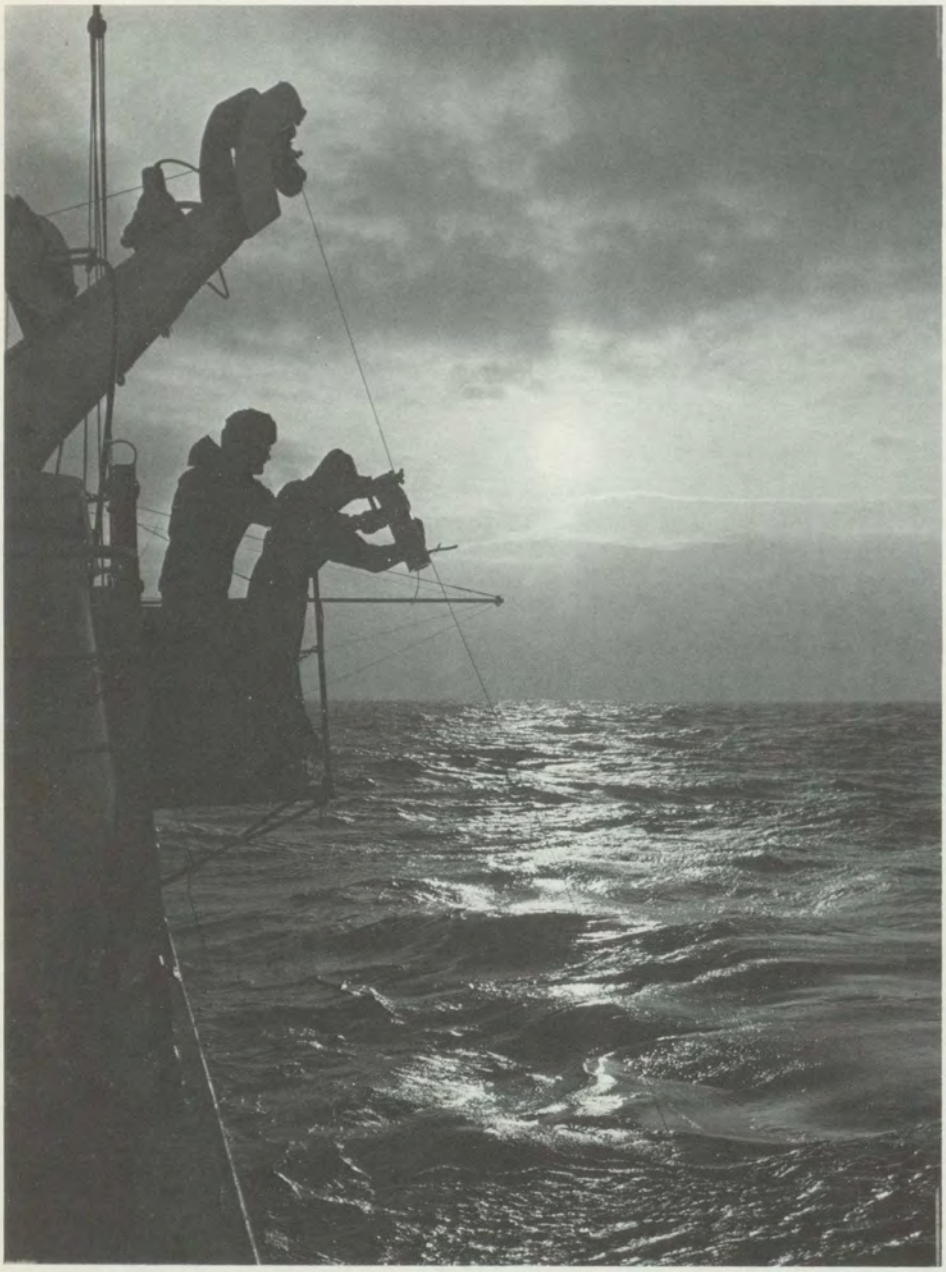
The only program compliance date, Dec. 31, 1975, specified in the Great Lakes Water Quality Agreement has come and gone. While unhappily all programs and measures required by the Agreement are not complete, many programs necessary to achieve prescribed water quality were in the process of implementation, or did meet the December 31, 1975 date. But not all.

The year 1975 characterized the most extensive efforts to date and the Commission's reports are now supported by a much stronger data base than existed in the past. However, there is a danger that the present momentum will not be maintained in the future because of the energy crisis, inflationary pressures and other factors. Implementation of surveillance programs recommended by the IJC's Water Quality Board will require increased commitments of funds and personnel.

The public perception of the time-table cleaning up the Great Lakes may be distorted. Control action on some pollutants can result in the elimination of their effects in the Lakes almost immediately. If the discharge of other pollutants to the Lakes were stopped tomorrow, however, it could be 15 or more years before some effects of the present pollution would disappear.

The determination of changes in water quality in these large bodies of water over a short period of time is difficult, if not impossible. Nearshore areas respond to remedial measures more rapidly and the effectiveness of

The public perception of the time-table for cleaning up the Great Lakes may be distorted. It could be many years before some effects of pollution disappear, even after the discharge of the pollutants to the Lakes is stopped.



The determination of changes in water quality in large bodies of water over a short period of time is difficult, if not impossible.

programs can be monitored through improvement in water quality in those areas. The 69 areas designated as "problem areas" by the Board and the Commission in 1975 should be used as a principal basis for assessing the effectiveness of remedial efforts. In most cases the problem areas are situated at either the mouths of tributaries or in the vicinity of populated urban centres.

There is a need to continue vigorous support, including financial, for the updating and improvement of sewage treatment works. Problems arising from combined storm and sanitary sewers require early resolution. Sufficient funding to assure the completion of municipal sewage treatment plants and to support adequate surveillance programs should receive a high priority from governments.

There is a need of continuing support for the updating and improvement of sewage treatment works.

In Canada, 94 per cent of the sewered population in the Ontario portion of the Great Lakes Basin is receiving adequate sewage treatment and by 1977, 97 per cent will be adequately served. On the United States side of the Great Lakes, 60 per cent of this population had adequate facilities by December 31, 1975, but all the major programs will not be in place until 1981. Completion of 11 major U.S. projects serving 6.3 million people were deferred beyond 1975. They are Detroit, Duluth, Gary, Cleveland (three plants), Euclid, Niagara Falls, Tonowanda, Syracuse and Buffalo. On the Canadian side, completion of small projects at Marathon, Midland, Parry Sound, Trenton and Iroquois were delayed till 1976; a larger project at Thunder Bay will not be completed until 1977.

The major effort for the control of industrial pollution is still to be undertaken, to say nothing of being actually achieved. There must be some comparability in the effectiveness of the U.S. and Canadian programs, if the Commission is to be able to evaluate the different approaches to industrial pollution control in the two countries. There is on file in the Great Lakes Regional Office of the IJC in Windsor, Ontario, increasing amounts of information about industrial waste discharges by individual firms on both sides of the boundary. This information is available to the public on request.

The Commission again in 1975 expressed its deep concern to governments about the concentration of polychlorinated biphenyls (PCB's) in the Great Lakes. Contamination by PCB's continues to be extensive and it is obvious that a voluntary program by the sole North American manufacturer to limit sales has not resulted in a decrease in PCB burdens in fish.

The IJC has urged the Canadian and United States governments to undertake national public discussions on the contamination of the environment by PCBs and the consequences of strictly controlling the importation, sale, use and disposal of PCBs.

The presence of PCBs in the environment had been a major concern of the

The presence of PCB s remains a major problem for the Great Lakes.

Commission and it is urgent that this matter receive attention in the near future. Early warning mechanisms for screening new chemical substances are required. In rapidly expanding technologies the effects of some substances will be unknown but statistically it can be inferred that some will be harmful to water, fish, fowl or humans.

Another cause for concern is the absence of regulations for the control of vessel wastes. Compatible vessel waste regulations as required by the Great Lakes Water Quality Agreement were still not in place at the end of 1975 even though the Agreement stipulates that such regulations were to be developed within a year after its signing in April, 1972. Compatible regulations to control waste discharges from all classes of vessels using the Great Lakes are necessary to control pollution from this source.

The Commission held a four-day meeting in Windsor, Ontario with its Great Lakes Water Quality Agreement institutions. In addition to extensive reports from its principal advisor the Great Lakes Water Quality Board and its subcommittees, the Commission received preliminary conclusions reached by the Upper Lakes Reference Group. This Group is preparing a final report on pollution problems of Lakes Huron and Superior. From its Pollution from Land Use Activities Reference Group the Commission received reports on the progress of detailed river basin studies. The Research Advisory Board reported on a series of seminars and workshops held to identify research needs and to recommend research programs to deal with varieties of Great Lakes Water Quality problems requiring study.

Now that the only compliance date in the Great Lakes Water Quality Agreement has passed (December 31, 1975) it is imperative that the two Governments adopt new specific target dates. These serve a useful function, giving pressure and substance to goal achievement and sharpening the intent of the Agreement.

Compatible vessel waste regulations were still not agreed upon in 1975 and remained a cause for concern.

Oil spills offer potential problems and the testing and evaluation of methods for coping with them is a necessary priority for Canada and the United States.

A minimum water quality objective will be applicable to all the lakes in the Great Lakes system, but the lakes will differ in their potential for enhancement and in the degree of effort required both for maintenance of minimum goals and for the enhancement of water quality wherever such higher standards are possible. New specific target dates for achievement of the objectives could serve a useful function.

Rainy River

The Rainy River Pollution Board was requested by the Commission to consider the possibility of assessing the economic factors of installing pollution control works in the pulp mills at Fort Frances, Ontario and International Falls, Minnesota. These pulp mills continue to be the major polluters on the Rainy River.

St. Croix River

The St. Croix Advisory Board on Pollution Control reported to the Commission on steps being taken by the Georgia Pacific Company in Maine to cut down on waste matter being dumped in the river. A delay in the delivery of pumps set back the date for start-up of a new waste-treatment facility — now rescheduled for April 1, 1976 with the operational level to be reached by July 1, 1976. This facility is expected to provide a major instrument to clean up the St. Croix River.

St. John River

The Canada-United States Committee on Water Quality in the St. John

A Canada-United States Committee has recommended the establishment of a water quality agreement for the international section of the St. John River.

River and Tributaries Crossing the International Boundary, set up by agreement of the United States and Canada under a NATO program for the environment, recommended to the governments and the Commission that the two countries negotiate a Water Quality Agreement for the International Section of the St. John River and its international tributaries. The Commission was informed that actions taken on both sides of the border are cause for optimism but a mechanism such as the proposed Agreement is necessary to ensure continuation of the good progress now being made. The Commission requested the Governments to continue the Committee until the International Joint Commission has made other arrangements for the provision of technical advice.

Red River

The International Red River Pollution Board which monitors the Red River for water quality as it crosses into Mani-

toba informed the IJC that a serious depletion of dissolved oxygen had occurred; a slug of oxygen-depleted river water approximately eight miles in length moved northwards into Canada. Investigation revealed that an unauthorized release of snow-melt water containing molasses and condensate spills from a sugar beet processing plant caused the slug. A $50,000 U.S. federal penalty resulted.

Air Quality

Although transfrontier air pollution is not referred to in the Boundary Waters Treaty, the Commission has been requested by the governments of Canada and the United States to concern itself with the problem. In the summer of 1975 the IJC received a Reference requesting it to report on the state of air quality in the Detroit-Windsor and Port Huron-Sarnia areas and on measures being undertaken for its improvement.

This particular Reference is a further indication that various governments are seriously concerned with the need to improve air quality. On a continuing basis the IJC will examine into and report on the air quality, and with particular regard to the Michigan-Ontario Memorandum of Understanding, the measures taken to improve it.

In 1972 the IJC completed a comprehensive investigation and reported on the nature and extent of the area's air pollution problems, making specific recommendations for corrective action of Michigan and Wayne County, which included Detroit. Since that time progress has been made in further regulating air pollution and authorities in both countries have made firm commitments to achieve air quality compatible with objectives recommended in the IJC report. The Premier of Ontario and the Governor of Michigan signed the Memorandum of Understanding in 1974 pledging their cooperation in implementing air pollution control programs, to be completed by December 31, 1978, to achieve the recommended air quality objectives. This Memorandum comprises the basis of the present Reference to the Commission.

The Commission is authorized to report and make recommendations on the extent and adequacy of surveillance of air quality and on the adequacy of steps taken by governments and private interests to prevent, abate and control air pollution. After full consideration of the best method for meeting the obligations of this Reference, the Commission decided to appoint an International Michigan-Ontario Air Pollution Board to act as the monitoring and investigative arm

On a continuing basis the IJC will examine into and report on air quality at the Michigan-Ontario boundary.

of the Commission. This Board will deal specifically with air quality along the Michigan-Ontario border.

The IJC has had, since 1968, an International Air Pollution Advisory Board which will continue to advise the Commission on matters related to air quality along the rest of the boundary. There will be liaison between the two Boards.

The International Air Pollution Advisory Board in 1975 advised the Commission that the subject of sulphate pollution in the eastern sector of the common frontier is an important one and requiring special study. The IJC concurred with the recommendation that an international monitoring program is necessary in preparation for dealing with this problem. The Board was instructed to forward to the Commission in more detail a plan for such a program and this plan was close to completion at year's end.

Garrison Diversion Unit Reference

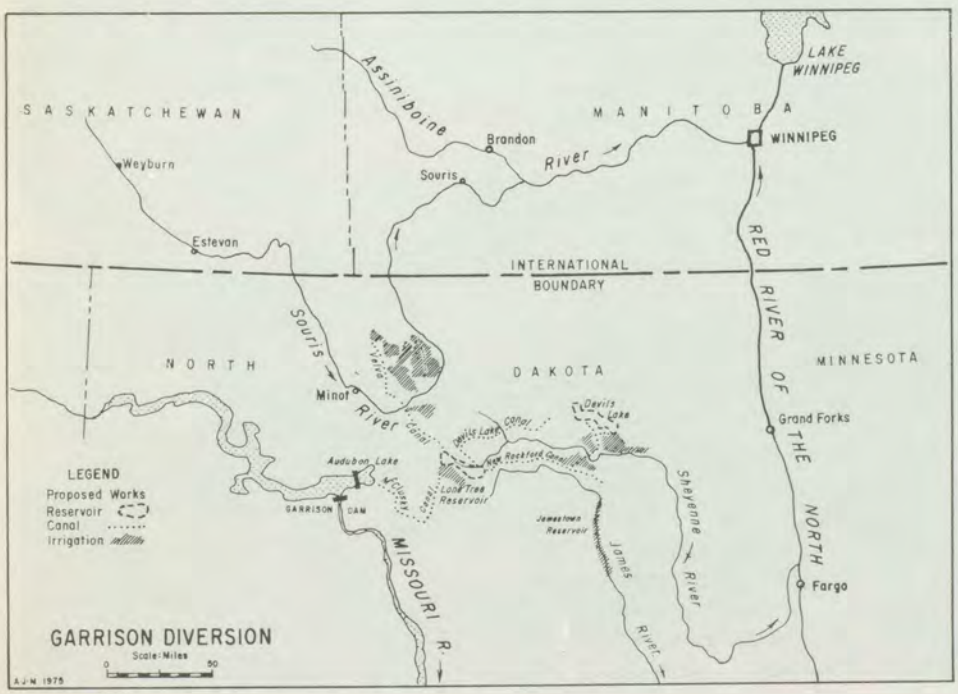
In October the International Joint Commission received a Reference from the governments of the United States and Canada requesting an investigation and report on the potential transboundary effects of the completion and operation of the proposed Garrison Diversion Unit in North Dakota. After several years of negotiations had failed to resolve differences between the two countries, the Commission was asked to recommend measures which might be taken to ensure that the project will not cause injury to health or property in Canada, contrary to the provisions of Article IV of the Boundary Waters Treaty.

The Garrison Unit is an extensive project designed to divert waters from the Missouri River basin in the west-central portion of North Dakota for irrigation in the north-central part of the state. North-central North Dakota is primarily drained by the Souris and Red Rivers which flow into Manitoba. The Government of Canada has concluded that the project would have adverse effects on Canadian portions of the Souris, Assiniboine and Red Rivers and on Lake Winnipeg. The Government of the United States has reached no final conclusion as to whether the project would be consistent with Article IV which states that "waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other".

The project calls for the diversion of a substantial volume of water from the Missouri River for the irrigation of 250,000 acres of farmland, for municipal and industrial use, for recreational uses, drainage of non-irrigable land and for stream-flow improvement. Drainage water from this area of irrigated land will run into the Souris and Red Rivers and eventually, into Canada.

In the Garrison project as envisaged, water would be pumped from Lake Sakakawea (formed by the Garrison dam built in 1956) by the Snake Creek pumping station into Lake Audubon, a wildlife refuge already built. The water would flow by gravity eastward along the 73.6 mile McClusky Canal to the Lone Tree Reservoir, lying astride the Continental Divide.

It would then flow by gravity northward and eastward through additional canals and existing streams and river systems to the irrigation areas.



The Garrison Diversion Project calls for the irrigation of 250,000 acres of farmland.

The Commission was asked to report to governments by October 31, 1976, an extremely tight timetable in view of the work involved and the importance of such a report. An International Garrison Diversion Study Board was established immediately to undertake necessary technical studies and to advise the Commission. Consisting of six Canadian and six United States experts, the Board was instructed to report its findings by August 15, 1976.

Promptly on receipt of the Reference, the Commission scheduled public hearings in North Dakota and Manitoba. Because of the early deadline established for the Commission's report to governments on this complex issue, the hearings were scheduled to take place only three weeks following receipt of the Reference. A special effort was made to assure that all interested parties were aware of the hearings and of their right to be heard. The news media in Manitoba and North Dakota were very cooperative in informing the public about the importance of the hearings, as were various organizations and government agencies.

Consequently, the hearings at Minot and Grand Forks, North Dakota and Winnipeg, Manitoba were well attended. Many briefs were submitted by individuals, governments and organizations. Those speaking about the Garrison project included scientists, engineers, farmers, politicians, students and the wider public.

Most of those attending the hearings in North Dakota spoke in support of the Garrison project, although a minority opposed it. Several speakers placed special emphasis on the value of the water diverted from the Missouri to municipalities in North Dakota seeking fresh water supplies. Those attending the Winnipeg hearings were overwhelmingly against the project, citing possible adverse effects on water quality and quantity, and the possible invasion into Canada of foreign species of plant and animal life because of the inter-basin water transfers.

Before the year ended arrangements were completed for the International Joint Commission to be briefed by the United States Department of the Interior's Bureau of Reclamation on the present status and plans for the ongoing construction of the proposed Garrison scheme.

Richelieu River - Lake Champlain

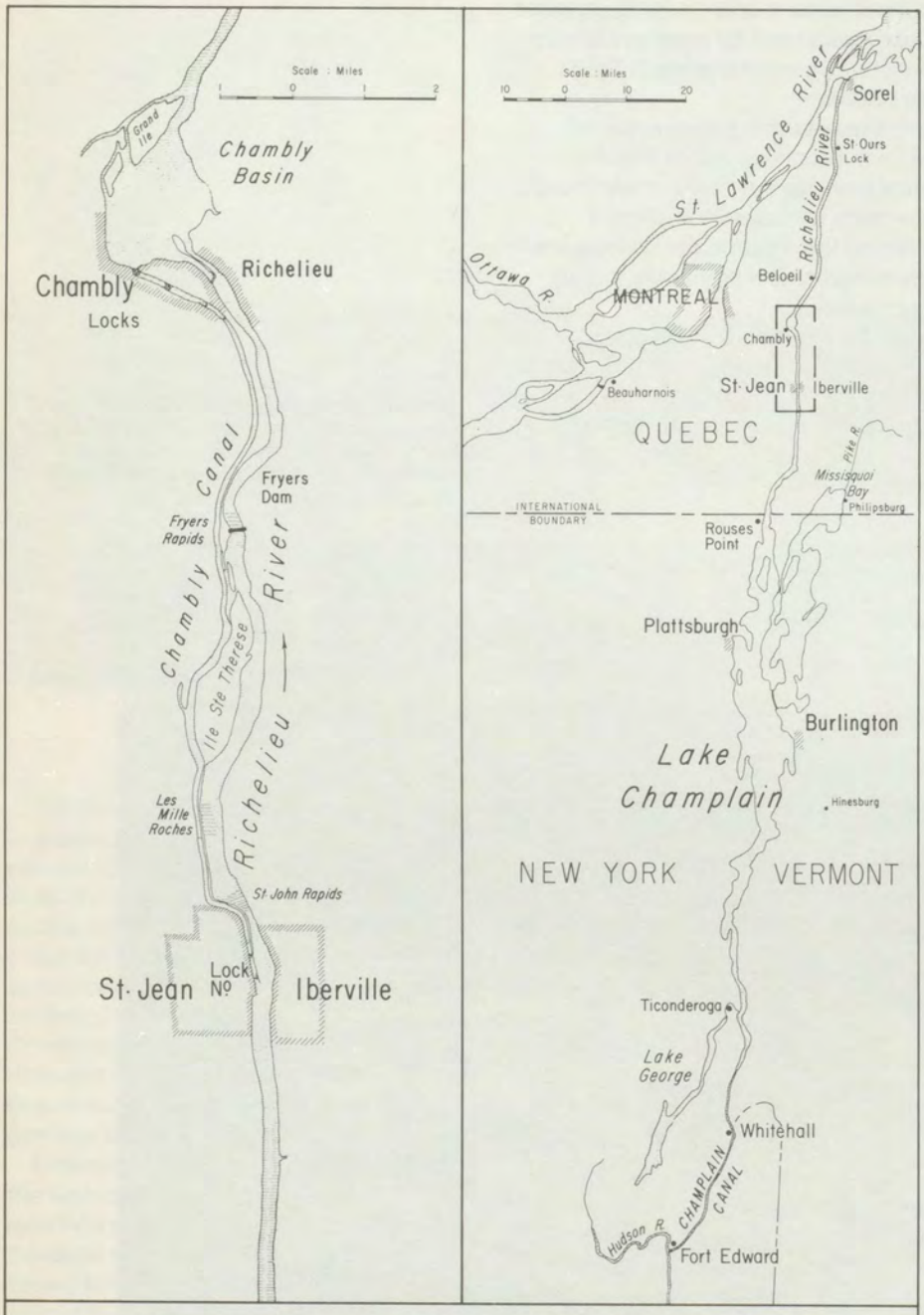
In March the International Joint Commission submitted to the Governments of Canada and the United States an Interim Report on Regulation of the Richelieu River and Lake Champlain. The Commission had been requested to investigate and report on "the feasibility and desirability" of regulating the Richelieu River to alleviate extreme water conditions in the River and in Lake Champlain.

The Commission was asked to determine the beneficial and adverse effects on the environment, the net economic benefits to each country and the desirable criteria for Regulation of Lake Champlain by means of works which might be undertaken in the St. Jean Rapids.

Because of the urgency involved, the Commission issued its Interim Report pointing out that completion of the enquiry is impossible without additional information concerning the environmental and economic impact of regulation.

Lake Champlain is located mostly in the states of New York and Vermont. The outlet of Lake Champlain, the Richelieu River, almost entirely in

A report on regulating the Richelieu River to alleviate extreme water conditions will not be completed until additional information concerning the environmental and economic impact is studied.



RICHELIEU RIVER - LAKE CHAMPLAIN

CAN SECTION 1-J-C

Quebec, flows north for 80 miles to the St. Lawrence River at Sorel, Quebec. Flooding over the years has caused considerable damage and hardship, in Quebec, although farmers and marina operators along the shores of the lake in the United States have also suffered injury.

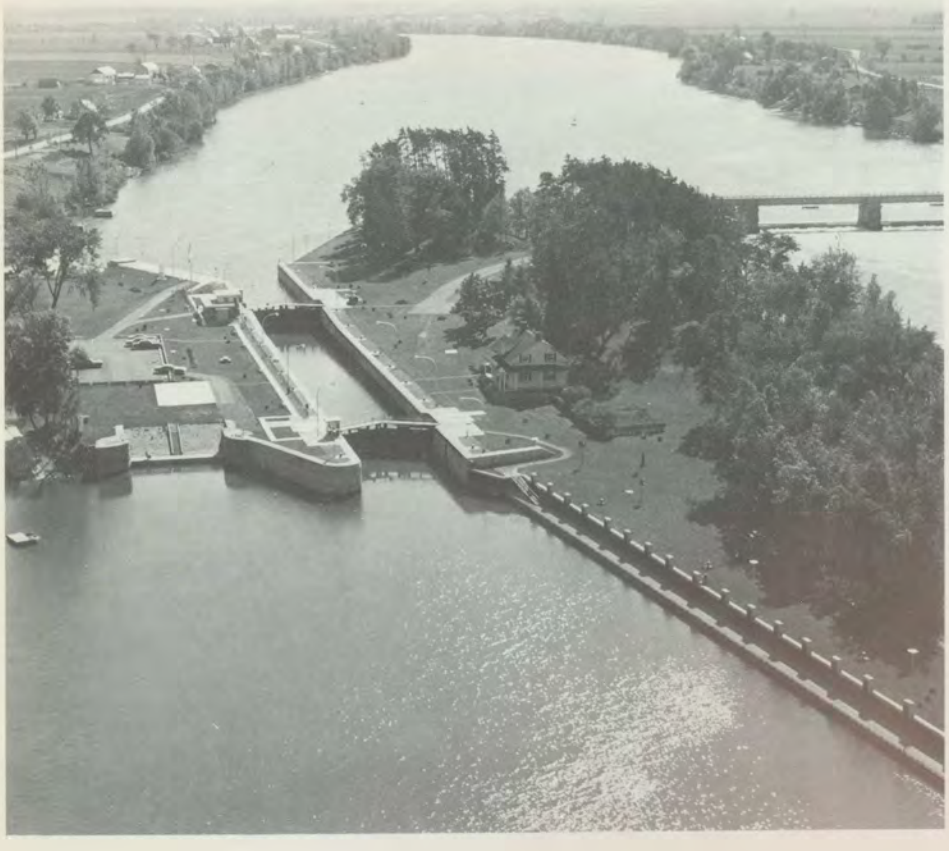
Lake Champlain and the Richelieu River support an unusual diversity of insect and plant life, fish, fur-bearing animals and water fowl. It is reasonable to assume that the shallows of the Lake and the adjoining wetlands hold the secret of the Lake's diversity and success. They provide necessary

breeding and nursery areas for the successful propagation of fish and wildlife. Marsh areas are also thought to play a valuable role in filtering out and utilizing a significant portion of nutrients in tributary waters entering the area. The significance of wetlands to water quality needs further examination. However, the claim has been made over a long period of time that the frequent flooding of the Richelieu valley causes intermittent and costly damage to agriculture, and that a remedy is urgently needed.

Following completion of the first phase of the Commission's study, the International Champlain-Richelieu Engineering Board, which had been formed to assist with the study, was disbanded. A new board, the International Champlain-Richelieu Board, was instituted to carry out the technical studies recommended in the Commission's report to governments. The new Board consists of four Canadians and four Americans, each possessing expertise required for the studies now underway. Great care was taken to assure that the Board would operate on a strictly bi-national basis to assure the objectivity and impartiality of all studies.

The International Champlain-Richelieu Board started immediately on its appointment in June, 1975 working with an interim study plan approved by the Commission. Funding questions took a considerable amount of the Commission's attention and effort, bringing into sharp focus the general problem of funding which often seems to occupy the time of the IJC.

The Board, with IJC approval, appointed an eight-member Environmental Impact Committee. This committee has been and will be working under the pressure of biological deadlines because certain important studies



The claim has been made over a long period of time that the frequent flooding of the Richelieu Valley causes intermittent and costly damage to agriculture, and that a remedy is urgently needed.

Lake Champlain supports an unusual diversity of insect and plant life, fish, fur-bearing animals and water fowl. Environmental impact studies are being carried out prior to any decision being taken on regulating water levels.

can only be made at specific times of the year. One of the first tasks undertaken was that of aerial photography and mapping.

The Board also formed a Net Benefits Committee and a Physical Aspects Committee. The directive issued to the International Champlain-Richelieu Board by the Commission instructs the Board to present its final report by December 15, 1977 and meanwhile to keep the public fully informed of the Board's progress.

Preservation and Enhancement of the American Falls

In its 1975 final report on the American Falls, the Commission concluded that the public's interest would be served best by not introducing any artificial means to preserve or enhance the beauty of the Falls. This can best be done by letting nature take its course. The two governments had asked the Commission in 1967 to investigate and report on necessary measures. Three years later, the U.S. and Canada asked the IJC to extend its investigation to determine whether visitors were endangered, not only on the flanks of the American Falls but also on the Goat Island flanks of the Horseshoe Falls on the Canadian side.

Experts from Canada and the United States were consulted and hearings were held to give the public an opportunity to submit its views. The possibility of removing all or some of the fallen rocks at the base of the Falls was rejected, at least for the immediate future.

At one point during the investigation the Falls were dewatered to permit more detailed study. A realistic model of the American Falls was constructed and proved a valuable aid.

In its report to the two governments the Commission recommended that a study be jointly conducted as soon as practicable to examine the full range of possibilities of preserving and enhancing Niagara Falls as an international scenic wonder, recognizing not only the "jewel" of the Falls, but also the surrounding "setting" in which they are placed. The study should give consideration to the economic impact and the necessary institutional arrangements which might be affected. As early as 1968 the IJC had recommended to governments that it be authorized to undertake a broad environmental study of the Niagara area, (the subject was mentioned to governments twice more in 1971) but the governments of Canada and the United States have never formally responded to this request.

The completion of the American Falls investigation by the international

The IJC recommended a joint study to examine the possibilities of preserving and enhancing Niagara Falls as an international scenic wonder.

board appointed by the Commission was delayed by insufficient United States funding during the course of the study. Moreover, the long period required for the exchange of notes and subsequent approval for authority to dewater the American channel and use the diverted water for power generation delayed the geological field work. The conclusions reached appeared to be received favourably by most commentators.

The Commission, its Record and its Responsibilities — An Appraisal of 1975

A. Some General Perspectives on Programs and Procedures

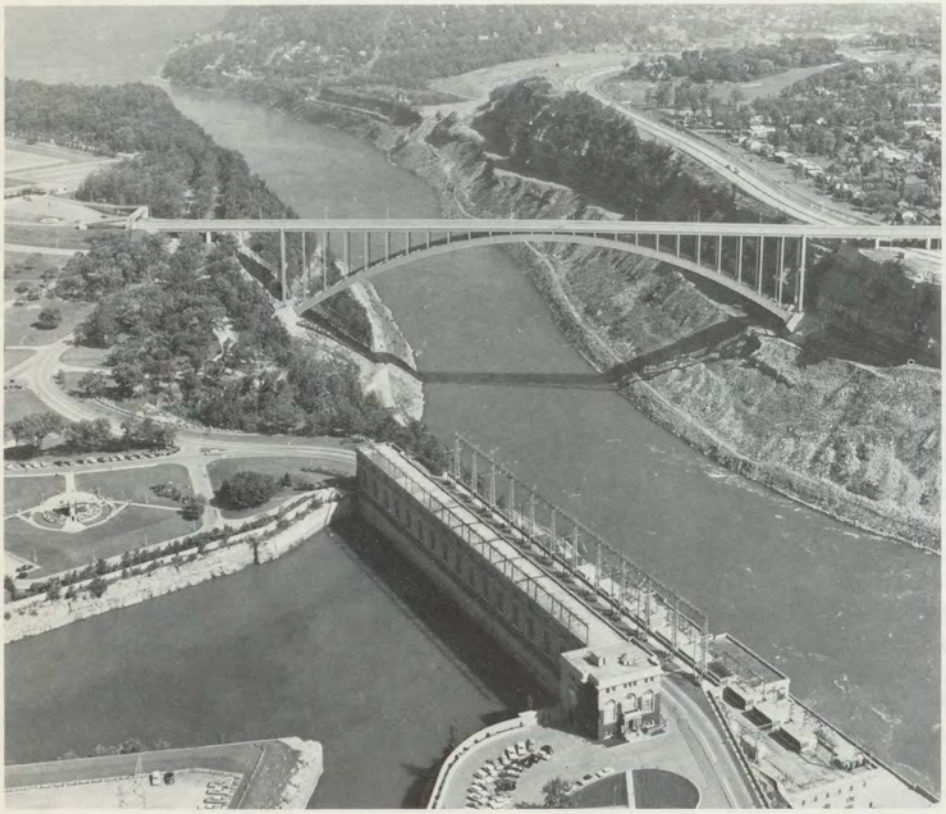
The preceding pages have reported on the year's activities of the Commission and its Boards. It may be useful now to examine and evaluate problems touching on the ability and needs of the Commission to carry out its growing responsibilities.

An increased awareness of the importance of protecting the environment combined with the complexities of modern society has been reflected in the activities of the International Joint Commission. References and applications from governments must be dealt with, meetings with various IJC international boards are needed for reporting and advising, public hearings must be attended and a wide variety of problems which arise throughout the year often require the attendance of all Commissioners at such sessions. The Commission is also involved in a continuing search to find the best policies and procedures for dealing with its specific international responsibilities.

Over the years the Commission has been moving from an institution dealing with classical boundary and transboundary water problems and disputes to one that now monitors and helps governments deal with a broad range of environmental concerns shared by the two countries along their common frontier. Its growing roles in monitoring and investigating water quality, water levels, air quality, and related pollution from land-use activities that may affect the air-water complex, gives to the Commission an environmental posture that now influences its own perspectives and, perhaps, also the perceptions of the two governments.

The effect of such a re-shaping of the attitudes of governments and of the perspectives of the Commission itself is reflected in the types of investigation the Commission has been asked to undertake and the particular ecological skills and point of view the Commission must apply to its more complex role. Indeed, the common frontier today presents a combination of environmental and economic imperatives that

The IJC deals with an expanding range of environmental concerns shared by the United States and Canada along the common frontier.



The common frontier today presents a combination of environmental and economic imperatives that directly and indirectly touch on the duties of the Commission.

directly and indirectly touch on the duties of the Commission whether determined by the Boundary Waters Treaty, the Great Lakes Water Quality Agreement — and other instruments — or by specific References or invitations from governments to consider other problems given to it.

The Commission has had to shift its focus in response to these tendencies now reshaping its work and yet maintain the established core pattern of its activities that for so long have given it the confidence of governments and the cooperation of the agencies on both sides of the frontier.

There are a number of steps the Commission has been taking in recent months to meet the changes which governments and events are imposing upon it. The more important of these adaptations may be summarized as follows:

1. A continuing study process has been going on within the Commission since 1974 reviewing established principles and procedures which require some modernization if future effectiveness is to be achieved. For example, the Commission has concluded that many difficulties are encountered when References are addressed to the Commission without the governments providing a firm program of funding within the two countries' respective legislative and budgetary systems. The absence of some consistent system in joint funding procedures leads to uncertainties and delays in proceeding with studies required under a Reference. This difficulty proves embarrassing to the Commission since it raises questions of comparative responsibility for delays in pursuing and completing investigations. The Commission is endeavoring to work out with governments more efficient funding and manpower procedures to assure the timely and effective execution of investigations.

2. The Commission has been considering staffing and funding needs for the improvement of its Headquarter's capability in view of the increasing volume of Commission business. This is necessary to assure that the environ-

Some of the research and survey work in support of the IJC is conducted at the Canada Centre for Inland Waters in Burlington, Ontario.

mental complex now characteristic of the Commission's field activities, and reflected in the studies and reports of its various Boards, as well as in Applications before it for Orders of Approval, can continue to be dealt with professionally. The Commission must continue to have the assurance that it will receive the best advice from its own officials with which to critically evaluate studies and reports from its Boards. In addition, the general level of required knowledge about water uses, water quality and air quality, and the growing public concern with air and water contaminants and pollutants, has imposed upon the Commission itelf an obligation to keep reasonably abreast of these potentially threatening factors along the frontier. The Commission however cannot pretend, nor does it desire, to substitute itself for the network of experts employed in its field studies and monitoring and control activities, experts drawn from the agencies of all governments concerned. Nevertheless, the Commission finds it necessary to expand existing, and to develop new forms of Headquarters capability.

3. The Commission has decided, after much discussion, to bring to the attention of Governments the need for improved procedures that will provide both Governments with sufficient notice and therefore opportunities for consultation, before any projects are planned or undertaken along the common frontier that might have adverse effects on water levels, water use, water quality or air quality in the region of the boundary. The Commission believes that there are presently direct and indirect procedures for such notice in the case of Applications affecting levels and flows that must come to the Commission for the Commission's approval. Such Applications provide a degree of notice to both Governments accordingly. Similarly, when both Governments have decided upon a Reference the effect of their negotiations leading to a Reference becomes in fact a process of notifying and consulting with each other.

But the Commission has become increasingly aware that there is no formal duty to notify and consult in the Boundary Waters Treaty or the Great Lakes Water Quality Agreement despite the indirect opportunities provided by these instruments. For this reason, the Commission considers it to be in the best interest of both countries, and of the various regimes with which the Commission is involved, for Canada and the United States to adopt more systematic procedures whenever projects are planned or undertaken which might have adverse environmental impacts along the common frontier. The Commission further believes that the combination of these general principles to "notify and consult", together with the procedures already in force with respect to Applications and References, would create a more satisfactory framework to protect the interests of both countries.

4. The Commission is concerned with the growing uses and potential contamination of ground-waters and their relations to surface boundary and trans-boundary water systems. It hopes to have both governments undertake studies of such ground waters to encourage up-to-date knowledge about them, to permit equitable sharing along the frontier, and to prevent possible abuse or contamination of this shared resource.

5. The Commission now has reasonably well-developed procedures of informally alerting governments about water use, water quality or air quality problems that threaten the interests of both countries along the common frontier. This is a valuable tool to encourage early cooperation and consultation by governments whether the Commission itself later becomes involved or not. Experience demonstrates that it is possible to perform this function without unduly intervening in matters which remain the primary responsibility of governments when it comes to action or until referred to the Commission. In the Commission's view, some general alerting duties at least in a limited, preventative sense, are a valuable aid to the governments.

Alerting governments about water pollution remains a continuing and major role of the International Joint Commission.

6. The public perception of environmental impact has become increasingly significant. In consequence, the Commission will continue to take into account these perceptions in the course of its work under the various instruments governing its activities.

7. As the 1974 Annual Report indicated, special attention is being paid to providing a greater public input to IJC activities through expanding programs of public participation. Indeed, in 1975 the Commission set out guidelines for its Boards in their dealings with the public through proposing special information meetings, press conferences and releases. In addition, the Commission is considering a possible role of public advisory committees to Boards, wherever appropriate, but the Commission is under no illusions about the difficulties involved in structuring such committees.

8. The Commission is now developing a policy for systematic publication of its public records, particularly materials having a jurisprudential or historical value.

9. The Commission instituted a program in 1975, now well-established, to present regularly and on a quarterly basis, to both governments, a list of all reports and recommendations to which the governments have not yet given a substantive response. This procedure will help to avoid the situation of having an accumulation of unanswered reports and recommendations. There is every indication that the governments are satisfied with this quarterly reporting procedure.

B. Specific Recent Activities and Their Problems

The Commission in evaluating the significance of its activities in 1975, deems it desirable to comment on particular difficulties and opportunities arising out of some situations.

1. The receipt by the Commission of the Reference to survey and monitor air quality in the Detroit-Windsor, Sarnia-Port Huron areas, is now added to the watchdog role which the Commission's International Air Pollution

Surveying and monitoring air quality at the Sarnia-Port Huron area has been added to the watchdog role which the IJC has for reporting air pollution incidents along the entire U.S.-Canada boundary.

Advisory Board continues to have for reporting air pollution incidents along the remainder of the entire boundary.

At the same time extensive and continuing surveillance of water quality in the St. John, the St. Croix, the Red, and the Rainy rivers — to which must be added the Commission's important role under the Great Lakes Water Quality Agreement — gives the Commission a growing environmental perspective along the whole of the common frontier.

2. The air pollution incident in Windsor resulting from a power plant in Detroit allegedly causing damage in Windsor, and reported elsewhere, raises the question as to whether there ought to be a more efficient and less cumbersome method for settling claims arising from transboundary pollution than that of leaving claimants to pursue their actions in the courts. The Commission believes that this incident may suggest to both governments the need to examine this problem of means and standards for settlement of claims.

3. In the course of its hearing on the Garrison Diversion Reference the Commission became aware of public concern about construction activities during the life of the investigation by the Commission. By the end of the year the Commission was attempting to satisfy these anxieties by enquiries through its Board and by referring anew to the assurances given by the Government of the United States in the Reference itself.

4. Certain concerns were felt by the Commission throughout the last six months of 1975 in being assured of the funding required to carry on with the new Richelieu-Lake Champlain environmental study for the balance of that year and for the new year. Hopefully, such uncertainties in the future will be lessened or eliminated if the Commission's proposal on the funding of References, as set out above, are accepted by both governments.

5. The Commission sat 55 days in 15 executive sessions and held four public hearings, requiring seven days.

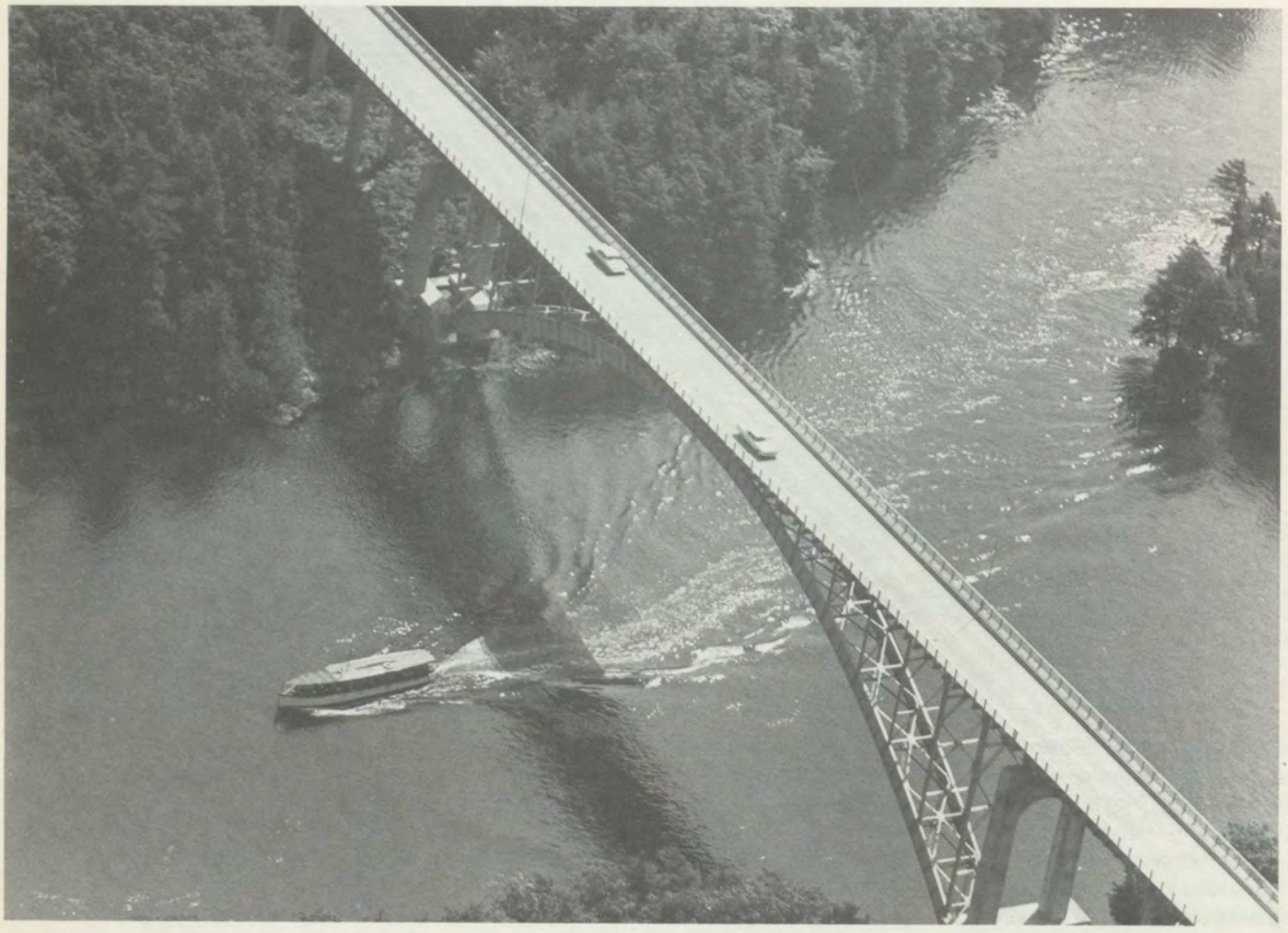
The air pollution incident at Windsor-Detroit raises the question of a method needed for settling claims.

Hence an appraisal of the Commission's year cannot conclude without some understanding, that the Commission is now meeting virtually once a month in executive session and in public hearings. Indeed, the Commission is meeting between nine and eleven times each year at the very least, either for hearings or executive business. Since only the Co-chairmen work full-time in this independent bi-national agency, these demands place great strains on the non full-time Commissioners, two from each country. The Commission has begun to give some thought to the significance of the changing workload on the possible restructuring of the Commission. Equally, this work pattern places new responsibilities on headquarters staff, itself very small by any standards — six officers in Washington and six in Ottawa — and the Commission has been compelled to consider the significance of these limited staff facilities on its present and future capabilities.

C. Concluding Observations

In evaluating its independent but harmonious relations with governments the Commission knows that Canada and the United States recognize the advantages from which all benefit by having the Treaty and the Commission system in place to help the governments regulate and protect the common frontier. These bi-national advantages, however, can be realized only if there is a constant exercise of political will, motivated and inspired by general public interest, on the part of federal, state and provincial governments as they deal with the many responsibilities they share for water use, water quality and air quality. For these are common responsibilities that geography and separate national economic development have imposed upon people and their institutions along the common border. The Commission believes that it is absolutely essential that the never-ending challenge of guarding and enhancing the boundary environment should continue to be met by the people of both countries and their governments with steadily increasing determination.

Clearly, this objective can be achieved only partly unless both governments have a strong and continuing sense of commitment to all of the programs involved. For example, the Great Lakes region has become



The governments and the peoples of the United States and Canada must remain steadfast in their desire to protect and enhance environmental quality all along the frontier.

the very center-piece for an indispensable continent-wide vigilance, and applied scientific imagination, since all of its life-enhancing water and air systems are perilously vulnerable. Apart from its daily duties under the various mandates governing its work, the Commission therefore regards it as an essential responsibility to maintain some over-view of all the boundary processes that may enhance or degrade the bi-national environmental integrity of the common frontier. The Commission therefore exhorts the governments and the peoples for whom it works to continue steadfast in meeting the challenge of the environment that is a necessary consequence of economic growth and technological change in a modern industrial society.

Appendix 1

The United States-Canada Boundary

The international bridge at Sault Ste. Marie.

Length of Border (Including Alaska-Canada)

5,526 miles
3,145 miles land
2,381 miles water

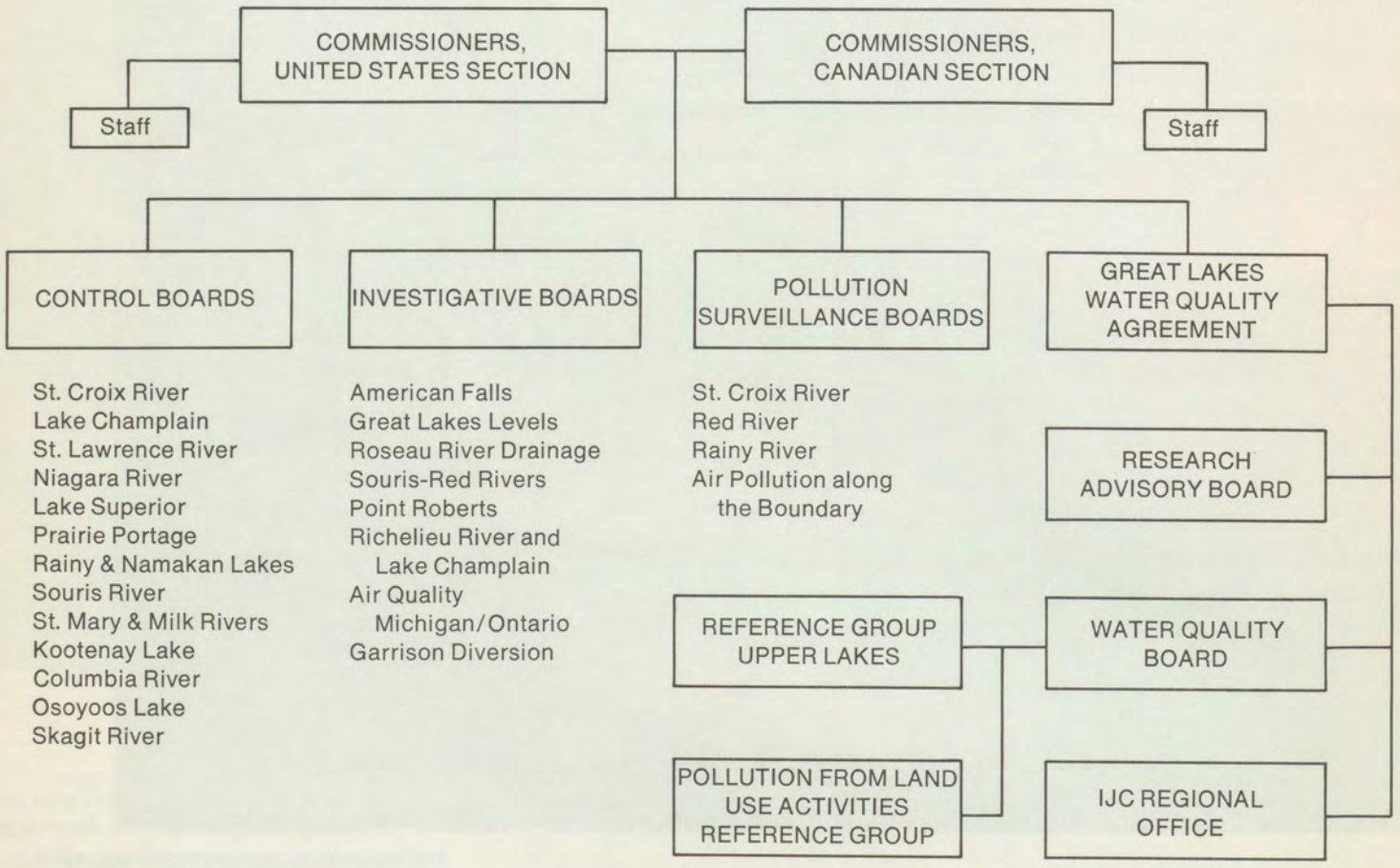
The United States-Canada boundary is shown on 255 official boundary maps. The historical aspect of the boundary covers a span of 193 years of treaties, negotiations and surveys.

More than 8,000 monuments and reference monuments mark the boundary on land and reference or range it on water. Reference monuments are located on shorelines from which the boundary position can be calculated where it passes over water. All monuments along the boundary are located so that they tie in with the survey networks of both the United States and Canada through 1,000 survey control stations established for this purpose near the border.

A variety of markings is used to mark the border; most are spaced at a distance of from one to one-and-a-half miles. The International Boundary Commission is responsible for determining the position of any point on the boundary necessary to settle questions that might arise between the two Governments.

Appendix 2

IJC Organizational Arrangement and Boards
(1975)



Appendix 3

IJC List of International Projects 1912-1975

Under the Boundary Waters Treaty and other international arrangements, the IJC generally receives its projects

(1) by *applications* to it for approval of certain activities on boundary or transboundary waters, or (2) by referral to it by the U.S. and/or Canadian Government to make investigations *(references).*

— A or R on the chart indicates *application* or *reference.* ....

— The *year* refers to the date the application or reference was submitted to the IJC.

— The IJC *Document number* is the official identification number for the purpose of keeping track of the projects.

NUMERICAL INDEX AND CAPSULE OF IJC DOCKETS

Year	*Docket No.*	*Title*	*Action*
1912	1 A	**Rainy River Improvement Co.** Kettle Falls Dam	Dismissed as covered by a "special agreement."
	2 A	**Watrous Island Boom Co.** Boom in Rainy River	Approved. No Board.
	3 R	**Lake of the Woods Levels**	Completed. Resulted in the 1925 Convention. Active board.
	4 R	**Pollution of Boundary Waters**	Completed. Recommendations not implemented.
	5 R	**Livingstone Channel** Detroit River	Completed. Recommendations implemented.
1913	6 A	**Michigan Northern Power Co.** St. Mary's River Dam (with No. 8)	Approved. First Board of Control. Active board.
	7 A	**Greater Winnipeg Water District** 100 mgd from Shoal Lake for Winnipeg water supply	Approved. No board.
	8 A	**Algoma Steel Corporation** St. Mary's River Dam (with No. 6)	Approved. Active board.
1914	9 R	**St. Mary and Milk Rivers** Article VI of B.W. Treaty	Issued Order in 1921 on method of water measurement and apportionment.
	10 A	**The St. Croix Water & Power Co.** Grand Falls Dam (with No. 11)	Same structure. Approved in 1915. Amended in 1931 — Docket 28.
1915	11 A	**Sprague's Falls Mfg. Co.** Grand Falls Dam (with No. 10)	Active board.
1916	12 A	**International Lumber Co.** Boom in Rainy River	Approved. No board.
	13 A	**St. Clair River Channel**	Approved dredging. No board. Compensating works not constructed.
1918	14 A	**New York and Ontario Power Co.** Waddington Weir	Decision postponed. Now inundated by St. Lawrence Power.
	15 A	**St. Lawrence River & Power Co.** Massena Weir	Approved. Board was established. Works removed prior to St. Lawrence Power Project.
	16 A	**Canadian Cottons Ltd.** Milltown Dam on St. Croix River	Withdrawn in 1919.

Year	Docket No.	Title	Action
1920	17 R	**St. Lawrence River Navigation and Power**	Completed. Treaty drafted in 1932. U.S. Senate did not ratify it. Revived in Docket 68.
1923	18 A	**State of Maine Fishways** Fishway in St. Croix River	Approved. No board.
1925	19 A	**New Brunswick Electric Power Commission** Grand Falls Dam on St. John River	Approved without passing on the issue of downstream benefits. No board.
	20 R	**Rainy Lake Levels**	Completed. Led to Convention of 1928. Active Board. See Docket 50.
	21 A	**Buffalo and Fort Erie Public Bridge Co.** Bridge over Niagara River	Approved. No board.
1926	22 A	**St. John River & Power Co.** Grand Falls Dam on St. John River	Approved transfer of approval granted under Docket 19.
1927	23 A	**Creston Reclamation Co. Ltd.** Dyking on Kootenay River in Canada and above the Lake	Approved. No board.
1928	24 A	**St. Lawrence River & Power Co.** Raise Massena Weir	No action. Hearing adjourned "sine die". Now inundated by St. Lawrence Power Project.
	25 R	**Trail Smelter Fumes**	Completed. Report not accepted by U.S. The tribunal award similar to IJC.
1929	26 R	**Roseau River Drainage**	Studies proceeding after a 40-year governmental delay.
	27 A	**West Kootenay Power & Light Co., Ltd.** Kootenay Lake Storage	Withdrawn in 1934.
1931	28 A	**St. Croix Water Power Co., and Sprague Falls Mfg. Co.** Grand Falls Dam on St. Croix River	Approved raising forebay 1.5 feet. Active board. Initial approval in Dockets 10 & 11.
1932	29 A	**Kootenay Valley Power and Development Co.** Dyking on Kootenay River in Canada near Creston	Approved. No board.
1932	30	Docket number assigned in error — same as above	
	31 A	**Madawaska Company** Grand Falls Dam on St. John River	Denied. Related to claims pursuant to operation under Dockets 10 & 22.
1934	32 A	**Canadian Cottons Ltd.** Milltown Dam on St. Croix River	Approved. Active Board.
1935	33 A	**Jean Lariviere** Private small dam on Little St. John Lake	Approved. No board.
	34 A	**Bruner, P.C.** Dyking on Kootenay River in Canada	Approved. No board.
1936	35 A	**Montana Conservation Board** Dam on East Fork of Poplar River	Approved. Dam not built. No board.
	36 A	**Myrum Geo. B.** Repair of Prairie Portage Dam	Approved. Repair work on existing timber dam not implemented.
	37 R	**Champlain Waterway** Deep waterway from St. Lawrence to Hudson River	Completed. Recommended new study after St. Lawrence Seaway built.

Year	Docket No.	Title	Action
1937	38 A	**Richelieu River Remedial Works**	Approved. Only control gates installed. Dykes and excavation not implemented. Active board.
1938	39 A	**West Kootenay Power & Light Co., Ltd.** Corra Linn Dam for Kootenay Lake Storage	Approved. Active board.
1939	40 A	**United States Forest Service** Prairie Portage Dam	Approval granted to reconstruct dam. Only cofferdam built. Active board.
	41 R	**Souris River** Water apportionment	Governments approved interim measures recommended by IJC. Active Board of Control.
1940	42 A	**Creston Reclamation Co., Ltd.** Dykes along Kootenay River in Canada	Approval settled outstanding differences. No board. Initial approval under Docket 23.
1941	43 A	**West Kootenay Power & Light Co., Ltd.** Additional two feet of storage on Kootenay Lake	Approved for one year. Active board.
1940	44 A	**Grand Coulee Dam & Reservoir** Backwater raised water level in Canada	Approved. Active board.
1941	45 A	**West Kootenay Power & Light Co., Ltd.** Additional two feet of storage on Kootenay Lake	Informal request considered to be unnecessary application.
	46 A	**City of Seattle** Ross Dam, Skagit River	Approved. Board established when Seattle & B.C. reached agreement in 1967.
1942	47 A	**West Kootenay Power & Light Co., Ltd.** Additional two feet of storage on Kootenay Lake	Approved until end of the war. Board active.
	48 A	**Creston Reclamation Co., Ltd.** Reclamation of flooded lands in Duck Lake	Approved. No board.
	49 A	**State of Washington** Zosel Dam at outlet of Osoyoos Lake	Approved. Active board.
	50 R	**Rainy Lake Watershed** — Emergency conditions in Rainy and Namakan Lakes. Special jurisdiction under Convention of 1928.	Completed. Issued and subsequently modified Orders specifying rule curves. Active board. See Docket 20.
1944	51 R	**Columbia River**	Completed. Led to Columbia River Treaty.
	52 A	**Ontario & Minnesota Pulp & Paper Co.** Ash Rapids Dam in Lake of the Woods	Approved but not built. Lake of the Woods Board of Control to supervise.
1946	53 R	**Sage Creek** Appropriation of waters	Completed. No action by Governments.
	54 R	**Pollution of St. Clair River, Lake St. Clair and Detroit River and St. Mary's River**	Completed. Surveillance over water quality until Great Lakes Water Quality Agreement signed in 1972.

Year	Docket No.	Title	Action
1948	55 R	**Pollution of Niagara River**	Completed. Surveillance until Great Lakes Water Quality Agreement signed in 1972.
	56	**Northern States Power Co.** Number assigned in error	Was dealt with under Docket 41.
	57 R	**Waterton & Belly Rivers** Further uses and apportionment of waters	Studies completed. IJC divided on national lines. Only Canadians reported.
	58 R	**Souris & Red Rivers** Further uses and apportionment of waters	Completed. Board still reports on its umbrella activities.
	59 A	**West Kootenay Power Co., Ltd.** Additional two feet of storage on Kootenay Lake	Approved for four years. Board active.
	60 R	**Passamaquoddy Tidal Power**	Completed. Government accepted apportionment of costs of further studies.
1949	61 R	**Air Pollution** in Windsor-Detroit area from vessels	Completed. Surveillance activities terminated in 1966.
1950	62 A	**Creston Reclamation Co., Ltd.** Levels of Duck Lake	Approved. Board active.
	63 R	**St. John River** Water resources of the basin above Grand Falls	Completed.
	64 R	**Niagara Falls** — Preservation and enhancement of their beauty	Completed and accepted by Governments. Active Board.
1951	65 A	**Libby Dam and Reservoir**	Withdrawn.
	66 A	**Consolidated Mining & Smelting Co.** Waneta Dam on Pend'Oreille River	Approved. No board.
1952	67 R	**Lake Ontario Levels**	Completed. Studies concurrent with Application under Docket 68.
	68 A	**St. Lawrence Power**	Approved. Very active board.
1954	69 A	**Libby Dam and Reservoir**	No decision. Problem solved by Columbia River Treaty.
	70 A	**Creston Reclamation Co., Ltd.** Modification of 1950 Order on Duck Lake	Approved. Board active.
1955	71 R	**St. Croix River** Use, conservation and regulation	Completed. Pollution aspect still under active surveillance.
1956	72 R	**Passamaquoddy Tidal Power**	Completed.
1959	73 R	**Rainy River and Lake of the Woods Pollution**	Completed. Rainy River still under active surveillance.
1961	74 R	**Additional Remedial Works above Niagara Falls**	Completed. Studies led to application under Docket 75.
	75 A	**Hepco and Pasny** Remedial Works above Niagara Falls	Approved. Active board.
1962	76 R	**Pembina River** Cooperative development of water resources	Completed. Recommendations not acted upon.
	77 R	**Champlain Waterway** Commercial navigation	Completed. Negative report.
1963	78 A	**Power Authority State of New York** Shoal Removal, Niagara Falls	Approved. Active board.

Year	Docket No.	Title	Action
1964	79 A	**Lake Erie-Niagara River Ice Boom**	Approved. Active board.
	80 A	**Vanceboro Dam**	Approved. Active board.
	81 R	**Red River Pollution**	Completed. Active surveillance.
	82 R	**Great Lakes Levels**	Studies not completed.
	83 R	**Pollution of Lower Great Lakes**	Completed. Led to signing of Great Lakes Water Quality Agreement in 1972.
1966	84 A	**Cominco** Two feet additional storage on Kootenay Lake	Approved for one season. Board active.
	85 R	**Air Pollution** In Detroit-St. Clair River areas	Completed. Governments yet to act. General observation along rest of boundary.
1967	86 R	**American Falls, Niagara River**	Completed. Governments yet to act.
	87 A	**Forest City Dam** On St. Croix River	Approved. Order void because applicant did not agree to conditions.
1968	88 A	**Raisin River** Diversion from St. Lawrence River	Approved. Board active.
1969	89 A	**Metropolitan Corporation of Greater Winnipeg** Diversion from Soal Lake of water for domestic purposes	IJC action deferred at applicant's request.
	90 A	**Creston Valley Wildlife Management Area** Duck Lake Levels	Approved. Active board.
1971	91 R	**Skagit River** Environmental consequences of flooding	Completed.
	92 R	**Point Roberts** Socio problems of residents	Studies still underway.
	93 A	**Cominco** Kootenay Lake Storage	Withdrawn.
1972	94 R	**Pollution of Upper Great Lakes**	Studies underway.
	95 R	**Pollution of Great Lakes from land use activities**	Studies underway.
	96 R	**St. John River Water Quality** A CCMS project	Review and pass upon report of special U.S.-Canada Committee when submitted.
1973	97 A	**U.S. Department of State** Emergency Regulation of Lake Superior	Application in suspense. Dealt with on interim emergency basis, pending Government's confirmation.
	98 R	**Richelieu-Champlain Regulation**	Interim report submitted. New environmental study underway in 1975.
1975	99 R	**Air Quality**	Studies underway.
	100 A	**Toussaint Causeway**	Application approved 1976.
	101 R	**Garrison Diversion Project**	Studies underway.

Appendix 4

IJC Actual and Anticipated Expenditures

1970-1977

Fiscal Year	Canadian Secretariat OTTAWA Expenditures	Man Years	Great Lakes Regional Office WINDSOR[2] Expenditures	Man Years
1970-71	499,000	11		
1971-72	536,000	11		
1972-73	451,000	12	***	4
1973-74	504,000	14	206,000	8
1974-75[1]	873,500	20	598,500	20
1975-76*[1]	1,450,000	24	850,000	20
1976-77**[1]	1,384,000	24	1,066,000	23
1977-78**[1]	1,114,000	25	1,260,000	28

Fiscal Year	U.S. Secretariat WASHINGTON Expenditures	Man Years	Great Lakes Regional Office WINDSOR[3] Expenditures	Man Years
1971	128,500	4		
1972	166,000	5		
1973	256,500	8	22,000	.4
1974	314,000	9	152,000	2
1975	369,000	9	400,000	4.2
1976*	389,000	9	588,000	10
1977**	409,000	9	765,000	10

*Estimated
**Anticipated
***Included in Ottawa Secretariat budget

[1]This includes payments to the Government of Ontario for one-half the costs of the work carried out by Ontario in direct support of the Commission's Land Use Activities Reference and the Upper Lakes Pollution Reference. United States' costs for these studies are borne by the Environmental Protection Administration.

[2]The costs of the Regional Office at Windsor, staffed by Canadian and United States Public Servants, are shared equally between Canada and the United States except for capital items (furniture and furnishings) which are paid for and retained by Canada. Each Country pays and recruits its own officials. The figures above represent salaries of Canadian professional and support staff and the total operating costs which are initially paid from Canadian appropriations and then are shared by the United States equally.

[3]Differences indicated by Regional Office totals are caused by differing fiscal years. Canada — April 1 to March 31: U.S. — July 1 through June 30. U.S. FY 1977 Oct. 1, 1976-Sept. 30, 1977.

Canadian expenditures expressed in Canadian dollars; U.S. expenditures in U.S. dollars.

It is not possible to estimate approximate values of the services of other Departments which have been provided to the IJC during the same period, which have run into millions of dollars. Much of the work performed by Departments for the IJC consists of work required as well under ongoing Departmental programs.

Appendix 5

IJC Documents 1975

IJC Reports to Governments:

Preservation and Enhancement of the American Falls, 1975
Interim Report to Governments on the Regulation of the Richelieu River and Lake Champlain, March, 1975
Third Annual Report of the International Joint Commission on Great Lakes Water Quality, December, 1975

Board Reports:

Report to the International Joint Commission by the International Roseau River Engineering Board on Joint Studies for Co-ordinated Water Use and Control in the Roseau River Basin, September, 1975
Report of the Canada-United States Committee on Water Quality in the Saint John River, September, 1975

Great Lakes Water Quality Reports:

Asbestos in the Great Lakes Basin, A Report to the International Joint Commission by the Great Lakes Research Advisory Board, February 1975
1975 Directory of Great Lakes Research Activities, by the Great Lakes Research Advisory Board, February, 1975
Structure-Activity Correlations in Studies of Toxicity and Bioconcentration with Aquatic Organisms; Proceedings of a Symposium at the Canada Centre for Inland Waters, March 11-13, 1975, Sponsored by the Standing Committee on the Scientific Basis for Water Quality Criteria of the Great Lakes Research Advisory Board
Proceedings of a Workshop on Water Quality and Land Use Activities, September 11-12, 1973, Sponsored by the International Reference Group on Great Lakes Pollution From Land Use Activities
Third Annual Report to the International Joint Commission on Great Lakes Water Quality by the Great Lakes Water Quality Board, July, 1975
Annual Report to the International Joint Commission of the Research Advisory Board, July, 1975
Annual Progress Report of the International Reference Group on Great Lakes Pollution From Land Use Activities, July, 1975
Upper Lakes Reference Group Fifth Progress Report, July, 1975

IJC Reports are available at the Commission offices in Washington and Ottawa. Great Lakes water quality reports are available at the IJC Great Lakes Regional Office.

Canadian Section:
151 Slater Street, Suite 850,
Ottawa, Ontario. K1P 5H3
Telephone 613/995-2984

United States Section:
1717 H Street N.W., Suite 203,
Washington, D.C. 20440
Telephone 202/296-2142

Regional Office:
100 Ouellette Avenue, 8th Floor,
Windsor, Ontario N9A 6T3
Telephone 313/963-9041 and
519/256-7821

Appendix 6

IJC International Boards

	Board Appearance at IJC Executive Meetings	Reports	
		Frequency	When
Boards of Control			
St. Lawrence River (4)z*	Yes	Semi-	Apr-Oct
Niagara River (2)	Yes	Semi-	Apr-Oct
Lake Superior (1)**	Yes	Annual	Apr
St. Croix River (1)	No	Annual	Apr
Prairie Portage (1)	No	Annual	Apr
Rainy Lake (1)*	As Rq	Annual	Apr
Lake of the Woods (1)*(x)	No	Annual	Apr
Souris River (1)	No	Annual	Apr
St. Mary-Milk Rivers (1)	No	Annual	Apr
Kootenay Lake (2)*	No	Annual	Apr
Columbia River (1)	No	Annual	Apr
Osoyoos River (2)	No	Annual	Apr
Skagit River (1)	No	Annual	Apr
Champlain (1) yy	No	Annual	Apr
Pollution Advisory Boards			
St. Croix River Pollution (3)	As Rq	Semi-	Apr-Oct
Rainy River Pollution (2)	As Rq	Semi-	Apr-Oct
Red River Pollution (2)	As Rq	Semi-	Apr-Oct
Air Pollution-Boundary (3)	Yes	Semi-	Apr-Oct
Great Lakes Water Quality Agreement			
Great Lakes Water Quality (9)	Yes	Semi-	Apr-Oct
Great Lakes Research Adv. (8)	Yes	Semi-	Apr-Oct
Upper Lakes Pollution (8)	Yes	Semi-	Apr-Oct
Land Use Activities (9)	Yes	Annual	Apr
Working Group on Dredging (7) yyy	Yes		
Investigative-Engineering Boards			
Garrison Study (12)	Yes	Monthly	
Champlain Richelieu (5)	Yes	Monthly	
American Falls (2)	Yes	Semi-	Apr-Oct
Great Lakes Levels (3)	Yes	Semi-	Apr-Oct
Roseau River (2)	Yes	Semi-	Apr-Oct
Souris and Red River (3)	No	Annual	Oct
Point Roberts (3)	Yes	Semi-	Apr-Oct
St. John River (3) (xx)			
Michigan/Ontario Air Pollution (3)	Yes	Semi-	Apr-Oct

Notes: * Regulation Data Submitted weekly. ** Regulation Data Submitted monthly. yy Inactive. yyy Not reporting directly. (x) Strictly not an IJC Board since created by Convention and appointed by Governments. (xx) Created by both Governments but reporting to IJC. (z) Indicates number of Canadian and American Board members. (As Rq.) as required.

Appendix 7

Directory of Commissioners and Staff Principals
1975

CANADIAN SECTION

151 Slater Street, Suite 850
Ottawa, Ontario K1P 5H3
Telephone: 613/992-2945

Commissioners

Maxwell Cohen, Q.C., *Chairman*
Bernard Beaupré
Keith A. Henry

Staff

J. Lloyd MacCallum, Q.C., *Assistant to the Chairman and Legal Adviser*
Murray W. Thompson, *Chief Engineer*
David G. Chance, *Secretary to the Commission*
Walter A. Sargent, *Information Officer*

UNITED STATES SECTION

1717 H Street, N.W., Suite 203
Washington D.C. 20440
Telephone: 202/296-2142

Commissioners

Henry P. Smith III, *Chairman*
Charles R. Ross
Victor L. Smith

Staff

John F. Hendrickson, *Executive Director and Environmental Adviser*
William A. Bullard, *Secretary to the Commission*
Stewart H. Fonda, Jr., *Engineer Adviser*
James G. Chandler, *Legal Adviser*
Herman Gordon, *Public Affairs Adviser*

REGIONAL OFFICE

100 Ouellette Avenue, 8th Floor
Windsor, Ontario N9A 6T3
Telephones: 313/963-9041 and 519/256-7821
Kenneth A. Oakley, *Director*
*Kenneth H. Walker, *Associate Director*

*Appointed April, 1976

INTERNATIONAL JOINT COMMISSION REFERENCES AND APPLICATIONS

SCALE OF MILES 50 0 50 100 150 200

DRN: A.U.M. 1955 REV 1976 — CDN. SECTION IJC OTTAWA

LEGEND

- Boards of Control
- Pollution Surveillance
- Investigative Boards
- Great Lakes Water Quality Agreement

KOOTENAY RIVER

27,39,43 West Kootenay Power and Light Co Ltd. Applications
45,47,59
65,69 Libby Dam Applications
23,42,48 Creston Reclamation Co Ltd Applications
62,70
29,30 Kootenay Valley Power and Development Co Applications
34 P.C. Bruner Application
84 Cominco Ltd. Application
90 Duck Lake Application
93 Cominco Ltd.

RAINY RIVER-LAKE OF THE WOODS

1 Rainy River Improvement Co Application
2 Watrous Island Boom Co. Application
3 Lake of the Woods Levels
7 Greater Winnipeg Water District Application
12 International Lumber Co. Application
20 Rainy Lake Levels
26 Roseau River Drainage
36 G.B. Myrum Application
40 United States Forest Service Application
50 Rainy Lake Watershed-Emergency Conditions
52 Ontario and Minnesota Pulp and Paper Co. App
89 Metropolitan Winnipeg Application

COLUMBIA AND SKAGIT RIVERS

44 Grand Coulee Dam and Reservoir Application
46 City of Seattle Application
49 State of Washington Application
51 Columbia River
66 Consolidated Mining and Smelting Co. Application
91 Skagit Environment

92 Point Roberts

MID-WESTERN

9 St. Mary and Milk Rivers
35 Montana Conservation Board Application
41 Souris River
53 Sage Creek
56 Northern States Power Co. Application
57 Waterton and Belly Rivers
58 Souris and Red Rivers
76 Pembina River
101 Garrison Diversion Unit

POLLUTION REFERENCES

4 Boundary Waters
25 Trail Smelter Fumes
54,55 Connecting Channels of the Great Lakes
61 Air Pollution of Windsor-Detroit Area
71 St. Croix River
73 Rainy River and Lake of the Woods
81 Red River
83 International Section, St. Lawrence River and Lakes Ontario, Erie
85 Air Pollution-Windsor, Detroit, Sarnia, Port Huron
94 Upper Great Lakes
95 Land use activities in Great Lakes System
96 Saint John River
99 Air Quality Detroit/Windsor Port Huron/Sarnia

5 Livingston Channel Detroit River
6 Michigan Northern Power Co Application
8 Algoma Steel Corporation Ltd. Application
13 St. Clair River Channel Application
97 U.S. Government Application-Emergency Regulation of Lake Superior

GREAT LAKES BASIN

21 Buffalo and Fort Erie Public Bridge Co Application
64 Preservation and Enhancement of Niagara Falls
74 Niagara Additional Remedial Works
75 Niagara Remedial Works
78 Shoal Removal, Niagara River
79 Niagara Ice Boom
86 Preservation and Enhancement of Niagara Falls

HEPCO & PASNY Applications

14 New York and Ontario Power Co. Application
15,24 St. Lawrence River Power Co. Applications
17 St. Lawrence River Navigation and Power
67 Lake Ontario Levels
68 St. Lawrence Power Application
82 Water Levels of the Great Lakes
88 Raisin River Application
100 Toussaint Causeway

RICHELIEU RIVER

37,77 Champlain Waterway
38 Richelieu River Remedial Works Application
98 Richelieu-Champlain Regulation
102 Flood Control Works Richelieu River

SAINT JOHN RIVER

19 New Brunswick Electric Power Commission Application
22 Saint John River Power Co. Application
31 Madawaska Co. Application
33 Jean Larivière Application
60,72 Passamaquoddy Tidal Power
63 Saint John River

ST. CROIX RIVER

10,11,28 St. Croix Water Power Co. and Sprague Falls Manufacturing Co. Applications
16,32 Canadian Cottons Ltd. Applications
18 State of Maine Application
71 St. Croix River
80 St. Croix Paper Co. Application
87 Forest City Application

SCALE OF MILES 50 0 50 100 200